

**IN THE CLAIMS:**

Please amend the claims as follows:

Claim 1 (Currently Amended): A semiconductor photocathode emitting electrons from a front surface in response to an incidence of infrared radiation, comprising:

a semiconductor substrate made of GaSb;

a light absorbing layer made of  $\text{InAs}_{(1-x)}\text{Sb}_x$ , where,  $0 < x < 1$ ; [[and]]

a first compound semiconductor layer having wider energy band gap than that of said light absorbing layer, said first compound semiconductor layer including Al,

wherein said first compound semiconductor layer is formed between said semiconductor substrate and said light absorbing layer;

first and second electrodes respectively formed on front and back surfaces of said semiconductor photocathode; and

an n-type contact layer interposed between said first electrode and said front surface,

wherein said semiconductor substrate is p-type, and

wherein said first compound semiconductor layer is p-type.

Claim 2 (Original): The semiconductor photocathode according to Claim 1, further comprises a second compound semiconductor layer provided so as to sandwich said light absorbing layer together with said first compound semiconductor layer.

Claim 3 (Currently Amended): ~~The semiconductor photocathode according to Claim 2~~

A semiconductor photocathode emitting electrons in response to an incidence of infrared radiation, comprising:

a semiconductor substrate made of GaSb;

a light absorbing layer made of  $\text{InAs}_{(1-x)}\text{Sb}_x$ , where,  $0 < x < 1$ ;

a first compound semiconductor layer having wider energy band gap than that of said light absorbing layer, said first compound semiconductor layer including Al, wherein said first compound semiconductor layer is formed between said semiconductor substrate and said light absorbing layer; and

a second compound semiconductor layer provided so as to sandwich said light absorbing layer together with said first compound semiconductor layer,

wherein both said first and second compound semiconductor layers are made of  $\text{Al}_y\text{Ga}_{(1-y)}\text{Sb}$ , where,  $0 < y < 1$ .

Claim 4 (Currently Amended): ~~The semiconductor photocathode according to Claim 2~~

A semiconductor photocathode emitting electrons in response to an incidence of infrared radiation, comprising:

a semiconductor substrate made of GaSb;

a light absorbing layer made of  $\text{InAs}_{(1-x)}\text{Sb}_x$ , where,  $0 < x < 1$ ;

a first compound semiconductor layer having wider energy band gap than that of said light absorbing layer, said first compound semiconductor layer including Al, wherein said first

compound semiconductor layer is formed between said semiconductor substrate and said light absorbing layer; and

a second compound semiconductor layer provided so as to sandwich said light absorbing layer together with said first compound semiconductor layer,

wherein both said first and second compound semiconductor layers are made of  $\text{Al}_y\text{Ga}_{(1-y)}\text{As}_z\text{Sb}_{(1-z)}$ , where,  $0 < y < 1$ , and  $0 < z < 1$ .

Claim 5 (Currently Amended): ~~The semiconductor photocathode according to Claim 2~~

A semiconductor photocathode emitting electrons in response to an incidence of infrared radiation, comprising:

a semiconductor substrate made of GaSb;

a light absorbing layer made of  $\text{InAs}_{(1-x)}\text{Sb}_x$ , where,  $0 < x < 1$ ;

a first compound semiconductor layer having wider energy band gap than that of said light absorbing layer, said first compound semiconductor layer including Al, wherein said first compound semiconductor layer is formed between said semiconductor substrate and said light absorbing layer; and

a second compound semiconductor layer provided so as to sandwich said light absorbing layer together with said first compound semiconductor layer,

wherein both the first and second compound semiconductor layer comprise a superlattice layer formed by a stack of alternate layers of AlSb and GaSb.

Claim 6 (Currently Amended): The semiconductor photocathode according to Claim 3 [[or 4]], wherein  $y$  is set to be in a range equal to or greater than 0.19 to less than 1.0.

Claim 7 (Currently Amended): A photoelectric tube comprising  
the semiconductor photocathode according to ~~any one of Claims 1 to 5~~ Claim 2; and  
an anode related to said semiconductor photocathode, wherein said semiconductor photocathode and said anode are enclosed in a vacuum vessel.

Claim 8 (New): The semiconductor photocathode according to Claim 4, wherein  $y$  is set to be in a range equal to or greater than 0.19 to less than 1.0.

Claim 9 (New): A photoelectric tube comprising  
the semiconductor photocathode according to Claim 3; and  
an anode related to said semiconductor photocathode, wherein said semiconductor photocathode and said anode are enclosed in a vacuum vessel.

Claim 10 (New): A photoelectric tube comprising  
the semiconductor photocathode according to Claim 4; and  
an anode related to said semiconductor photocathode, wherein said semiconductor photocathode and said anode are enclosed in a vacuum vessel.

Claim 11 (New): A photoelectric tube comprising  
the semiconductor photocathode according to Claim 5; and  
an anode related to said semiconductor photocathode, wherein said semiconductor  
photocathode and said anode are enclosed in a vacuum vessel.

Claim 12 (New): The semiconductor photocathode according to Claim 1, wherein one  
side of said semiconductor substrate is exposed.